

erty therefore, notwithstanding the liberal scope of my instructions, to extend the examination to the Grand River or beyond those streams which discharge between Dundas and Burlington Bay canal, until the nearer sources had been tested and found insufficient. The dividing ridge which separates the waters that flow into the Grand River from those discharging into Lake Ontario is between five and six hundred feet above the latter, this summit on the line of the Great Western Railway is in Dumfries, and is 594 feet above Ontario. A supply from the Grand River must be taken from a point on that river at least 600 feet above Ontario, and this elevation cannot be obtained nearer than Galt, a distance of upwards of 30 miles by any feasible route. The cost of any form of conduit for this length would range from £5,000 to £10,000 per mile, and this consideration would render any expenditure for surveys unwarrantable, at least until nearer sources had been condemned."

Assuming the Grand River to afford an ample supply for all future time, the water must have been purchased from those who now have the right to it and outside of this purchase it would have cost more than has been expended upon the present plan to bring it into Hamilton besides the cost of storing and distributing it there.

Lake Erie has been proposed as a source of supply unobjectionable in quality, unfailing in quantity, and as "cheaper than the cost of pumping." A few considerations only are necessary to demonstrate the absurdity of the latter supposition.

To bring a supply for Hamilton from Lake Erie, a pipe or conduit at least 30 inches in diameter and laid upon a grade which would give at least 100 feet of a fall in the distance would be required; if less fall is used the size of the conduit must be increased. The grade line of the pipe, therefore, would be 100 feet below the bottom of the Grand River at Caledonia or the equivalent to this upon any more eastern route.

The summit between Hamilton and Caledonia is 500 feet above Ontario, Lake Erie is 330 feet above Ontario. Add the 160 feet of fall required by the pipe and its level at this point would be 270 feet below the surface.

Tunneling, therefore, would be necessary for the greater part of the distance from Albion Mills to Lake Erie.

The cost would be counted by millions and it would be necessary to assume an annual charge for interest of over \$100,000 instead of one of \$10,000 per annum in cost of coal.

If Lake Erie water were ever brought to Hamilton by any other method than that of pumping it over the summit (which would require a greater lift than is now given to the water from Lake Ontario), it will be found cheaper to bring it by the route of the Welland Canal than by any other shorter one.

Before the present plan was adopted by the commissioners Mr. Keefer's report was submitted to two eminent hydraulic engineers, John B. Jarvis, Esq., the engineer of the Croton Water Works,